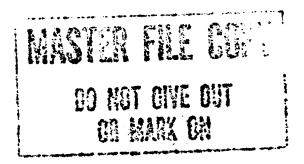


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Annual Bulletin on Soviet Economic Growth

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January-December 1986

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January-December 1986

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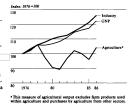
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Improved Performance, Modernization on Slow Track

A. Fconomic Growth Accelerates

A new high in farm output and a reduction of lost worktime boosted Soviet ONP growth to about 4 percent in 1986—in fastest rate in a decade. Gorbachev can claim some success in "mobilizing the human factor." for labor productivy in industry increased substantially, by roughly 3 percent. Progress in industrial modernization was slow, however, and some of the targets missed are important to Corbachev's program to accelerate future growth.

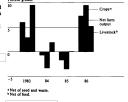
The plan for 1987 is ambitious, implying growth targets of roughly 4 percent for GNP and about 4.5 percent for indixty. Because the improved performance in 1986 reflects both mild winter weather and a rebound from unasulty poor performance in the previous year, sustaining growth in 1987 will be difficult. The discipline and antitoloch campaigns have already had their greatest impact, and the previous year in the state of the state



D. A Strong Recovery in Agriculture

Soviet farm output increased by more than 7 percent after a two-year downturn and subtaintially exceeded the record set in 1983. Factor productivity in the farm year and the second set in 1983. Factor productivity in the farm year and year.

An excellent forage crop and a 210-million-ton grain crop, the fourth largest on record, helped Moscow reduce grain imports and contributed to increased production of meat, milk, and eggs. Meat production of grew by 3.5 percent to 17.7 million tons, some 400.000 tons higher than planned. Per capita availability of meat increased by only 1 percent, however, because increased production was partially offset by a decinie in meat imports. Poston ordination reached



B. Industrial Growth Up

Industrial output increased by roughly 3.5 percent in 1986. Growth was especially fast during the first quarter, when output was nearly 5 percent higher than in first quarter 1985, a period of severe weather. During the last three quarters of 1986, industrial growth averaged about 3 percent. Although growth for the year was respectable, most industrial branches were criticized for failure to meet targets for additions of new capacity, delivery schedules, and improving product quality and mix.

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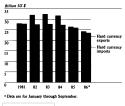
Some of the most important gains came in branches producing industrial materials. The nearly 4-percent growth in these producies probably reflect recent additions to capital stock and tighter management. In addition, miler-than-normal weather resulted in a decline in power outages and bottlenecks on the rail lines. The energy sector also improved. Oil output recovered the ground lost over the last two years, and the electric power industry code wheel with the disruptions caused by the Chernoly'i accident and lower hydroelectric output.



E. Hard Currency Trade Falters

The USSPA' foreign trade sector was battered for the second consecutive year, although the Soviets coped fairly well with a difficult situation. The collapse of world oil prices coupled with the sharp drop in the dollar relative to other major Western currencies resulted in an estimated 15 to 20-percent deterioration in the USSPA's hand currency terms of trade. Soviet trade data for January-September indicates the contract of the proposal proposal september of the plant of the proposal proposal september in 1986. The value of oil sales plummeted an estimated 35 percent. On the plus side, Moscow bostet the dollar value of arms exports to the Third World by roughly 15 percent.

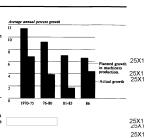
Reduced hard currency earnings contributed to an Reduced hard currency earnings contributed to an estimated 10-percent decline in the dollar value of hard currency imports, with real purchases dropping more. The Soviets limited the extent of the import cuts by selling markedly more gold at higher prices than in 1985 and by active borrowing in world financial markets.



C. Machinery: Problems With Timeliness, Assortment, and Quality

In the machinery sector, output grew by roughly 4.4 percent, a respectable showing but little better than in 1985 and well below the 6.6-percent growth planned to support industrial modernization. One reason for the failure to meet the planned output target may have been that the large investment in this sector resulted in downtime as enterprise installed new equipment or renovated their facilities.

Auchinery produces were repeatedly criticized by the authorities for failure to meet goals for product quality, deliveries, and assortment, According to Soviet leaders, "new" machinery barely exceeded older models in terms of productivity, and even showsase factories were turning out poor-quality machinery. In addition, all civilian machine-building ministries were criticized for not meeting monthly contractual deliveries, and in most of them fulfillment of contractual commitments was below that for 1985. Timely delivery of specific products is important to meeting plans for commissioning new capacity in the economy.



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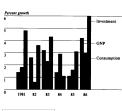
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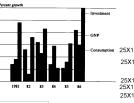
F. Priority for Investment

Gorbachev plans to raise the quality and quantity of manufacturing capacity to make modernization of industry a major source of growth by the end of the decade. In line with this strategy, new fixed investment growth sourced 10.7 percent, with an especially large increase directed to machinery producers. New-to-commissioned plant and equipment also increased, but by less than half the planned rate.

Per capita consumption rose, but slowly, mainly be-cause legal sales of alcohol, a large share of consumer spending, fell by 37 percent. Larger-than-usual gains in the supply of food and housing probably earned Gorbachev some credit with the populace.

According to our preliminary estimate, defense spending growth increased slightly to about 3 percent in real terms. Although somewhat abowe the rate of recent years, if does not appear that this growth represents any change in defense spending policy since Gorbachev's arrival. Rather, it was driven largely by the early stages of production of weapon systems under development well before he took office.





Improved Performance, Modernization on Slow Track

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Introduction

When Gorbachev took over in March 1985, the Soviet economy was mired in a decadelong slump. Overall growth in GNP under the 1981-85 Plan was headed for its smallest increase in any five-year-plan period. In 1984 GNP had increased by less than 1.5 percent, and during first quarter 1985 even the nonfarm sector was in bad shape as the coldest winter in 20 years crippled industrial growth. As General Secretary, Gorbachev immediately made the reinvigoration of the Soviet economy a top priority. He put forward an ambitious two-stage plan to increase economic growth. Initially, growth is to come from what he calls the "human factor"—a combination of measures to improve worker attitudes, weed out incompetents, and strengthen party discipline. Thereafter, he intends to achieve major productivity gains through a series of

organizational changes, modifications of the existing economic system, and, primarily, a large-scale modernization of the country's stock of plant and equipment.

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In 1985, during Gorbachev's first year in power, Soviet GNP growth was still very slow. Although industry maintained its 1983-84 rate of increase despite a dismal start, disappointing farm output again held GNP growth to about 1 percent.

Faster Growth in 1986

In 1986, however, growth in both industrial and farm output accelerated (table 1). Soviet GNP grew at its fastest rate in a decade—about 4 percent—as farm

Table 1 USSR: Growth of GNP and Selected Sectors of the Economy Percent

	Average Annual 1981-85	1981	1982	1983	1984	1985	1986 a
GNP b	1.9	1.4	2.6	3.2	1.4	1.1	4.2
Agriculture c	1.9	-0.7	7.2	6.0	-0.7	-1.7	7.3
Nonagriculture b	2.1	2.2	1.2	2.6	2.3	2.3	3.2
Industry	2.0	1.3	0.7	2.7	2.6	2.7	3.6
Construction	2.9	4.5	2.6	3.1	2.0	2.5	3.8
Transportation	2.3	4.1	1.2	2.8	1.5	2.1	4.0
Trade	1.5	1.8	0.2	2.6	2.3	0.8	2.3
Services	2.2	2.4	1.8	2.2	2.4	2.4	2.4

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b Value added at 1982 factor cost.

This measure for agricultural output excludes intra-agricultural use of farm products but does not make an adjustment for purchases by agriculture from other sectors. Value added in agriculture grew at an average annual percentage rate of 1.1 in 1981-85 and at an annual percentage rate of -2.1 in 1981, 8.6 in 1982, 5.7 in 1983, -2.0 in 1984, -4.0 in 1985, and 8.6 in 1986.

Mobilizing the	"Human	Factor"	Helps	Growth
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Gorbachev's most effective measures thus far to improve the Soviet economy have been those aimed at "revitalizing cadres"—strengthening labor discipline, getting rid of incompetent managers and officials, and improving worker attitudes. In their official report on 1986 performance, the Soviets credit much of their improved growth to a 20-percent reduction in lost worktime, less cadre turnover, a cutback in the use of manual labor, and expansion of the practice of combining jobs to reduce work force requirements.

In all likelihood the 20-percent reduction in lost worktime cited in the official report applies only to recorded losses, which largely represent sick leave, unexcused absences, and tardiness. It probably does not take into account time lost because of supply disruptions or equipment downtime. Nonetheless, the scope for the type of reduction reported is large and—by itself—probably accounts for much of the improvement noted in labor productivity and output growth in 1986.

Aside from the antialcohol and discipline campaigns already under way, the extremely tight labor market may have been a major factor in reducing worktime losses. Given pressure to meet Gorbachev's ambitious economic plans, managers in the RSFSR and Baltic republics, where demand for labor exceeds supply, may have adjusted by taking steps to improve labor utilization. Yearend data on three of these republics imply a reduction in the labor force.

Despite Soviet claims to the contrary, it is unlikely that reducing the number of manual workers was a major factor in the improvement in productivity in 1986. Many of these workers probably moved on to other low-skill jobs with little net gain in average worker productivity.

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Labor saving through "combining trades and duties" probably also was small in scale. This option has been available for many years. It was first mentioned as part of the Shchekino economic experiment (introduced in 1967), which called for workers to receive pay supplements for mastering more than one occupation to allow "combining of jobs" and has been incorporated into the rules of recent economic experiments. The job certification program, which in large part is meant to identify redundant job positions, reportedly has progressed very slowly, however, suggesting little groundwork has been done to permit combining jobs.

Gorbachev's broad policy of glasnost—openness in discussion of all types of heretofore taboo issues—also has been intended to help mobilize the "human factor." In one sense, glasnost is an aspect of the labor discipline campaign, a way to bring public criticism to bear against managers who are either ineffective or who fail to show initiative. The policy has been used to attempt to generate enthusiasm for economic restructuring and rouse the population from a state of general apathy. Another goal is to stimulate greater effort by management and labor by demonstrating an apparent honesty and responsiveness in the system.

production reached a new high and productivity throughout the economy increased. The improved performance in the latter half of 1985 and in 1986 means that Gorbachev can claim some short-term success for his economic strategy.

Sustaining this higher growth rate through 1987 and beyond will be a challenge, however, because the programs for improving labor discipline—already in

place—are likely to have a diminishing impact and because the 1986 results reflected both a rebound from agriculture's poor showing in 1985 and the effect of rather mild weather. Moreover, progress in industrial modernization in 1986 was erratic. Some targets important to Gorbachev's program to accelerate longer term growth were missed.

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Table 2
USSR: Industrial Growth by Branch

Percent

	Average Annual 1981-85	1981	1982	1983	1984	1985	1986 ª
Industry ^b	2.0	1.3	0.7	2.7	2.6	2.7	3.6
Industrial materials	2.2	1.6	0.5	3.8	2.4	2.8	3.9
Ferrous metals	1.2	-0.3	-0.4	3.0	0.9	2.8	2.8
Nonferrous metals	2.0	0.3	0.8	3.0	3.0	3.0	3.0
Chemicals	3.8	3.8	2.0	5.8	3.4	4.3	4.4
Wood products	2.1	1.9	0.6	3.0	2.8	2.1	5.4
Construction materials	1.5	1.5	-0.9	3.5	1.7	1.5	3.2
Energy	2.3	1.8	2.3	2.4	2.8	2.0	3.7
Fuel	1.2	1.3	1.7	1.3	0.8	0.7	3.9
Electric power	3.6	2.5	3.1	3.7	5.2	3.5	3.6
Machinery	1.7	0.2	-0.2	1.8	2.7	4.2	4.4
Consumer nondurables	1.7	2.2	1.3	2.4	2.4	0.2	1.1
Soft goods	1.6	1.8	-0.5	1.2	2.8	2.4	1.5
Processed food	1.8	2.5	2.9	3.4	2.1	-1.6	0.7

^{*} Preliminary.

Industrial Production Picks Up

Industrial output increased by roughly 3.5 percent in 1986—up from about 2.5 percent in 1985. Growth was the fastest in nearly a decade and only slightly below plan. Most major branches did as well or better than in 1985 (table 2). Nonetheless, most industrial branches were criticized frequently by the authorities for not meeting plans for additions of new capacity, for failure to meet delivery schedules, and for short-comings in product quality and assortment. Moreover, industry's momentum slowed during the year. Industrial growth during the first quarter of 1986 was about 6 percent higher than in first quarter 1985, when output was held down by severe winter weather. During the last three quarters of 1986, in contrast, industrial growth averaged only about 3 percent.

Within industry, some of the most important gains were posted in industrial materials—steel, chemicals, cement, and other basic products used throughout the economy. The energy situation also improved as oil

production recovered the ground lost over the last two years and the coal industry staged a comeback. In the machinery sector, output grew by roughly 4.5 percent, a respectable showing but little better than in 1985 and well below the 6.6-percent growth planned to support industrial modernization. The consumer goods picture was mixed, with rapid growth in processed food other than alcoholic beverages, but slow growth in output of soft goods and some consumer durables.

After a decade of steady decline, overall productivity in industry turned up in 1986. Growth in labor productivity increased and the decline in capital productivity slowed (table 3). Much of the improvement in productivity appears to have been the result of reducing losses of worktime through stricter discipline, less drunkenness on the job, and more effective management spurred, in part, by labor shortages (see inset).

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b Value added at 1982 factor cost.

Table 3
USSR: Growth in Industrial Output and
Factor Productivity

Percent

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	Average Annual 1981-85	1981	1982	1983	1984	1985	1986 a
Industrial production	2.0	1.3	0.7	2.7	2.6	2.7	3.6
Combined inputs	3.9	4.4	4.0	3.8	3.8	3.7	3.4
Work hours	0.6	0.7	0.8	0.4	0.5	0.4	0.4
Capital	7.0	7.8	7.0	6.9	6.8	6.6	6.1
Overall productivity	-1.9	-3.0	-3.2	-1.1	-1.1	-0.9	-0.2
Labor productivity	1.4	0.6	NEGL	2.2	2.1	2.2	3.1
Capital productivity	-4.7	-6.1	-5.9	-4.0	-3.9	-3.7	-2.4

a Preliminary.

Despite the output and productivity gains, some indicators of technical progress in industry showed little improvement. The share of steel output produced with modern technology, for example, was nearly unchanged, and in the machinery sector the rate of increase in production of high-technology products was not much higher than in recent years. Moreover, Soviet reporting suggests that gains in the conservation of energy and metal resources in 1986 were about the same as during the past five years.

Industrial Materials. Branches producing industrial materials performed well in 1986, with overall output up 3.9 percent. As recently as the early 1980s, shortages of industrial materials caused serious bottlenecks throughout the economy, and continued expansion in these branches is needed if plans to modernize industry and improve future growth are to stay on track. Improvements over the past three years in plant and equipment and management, plus better transport support, contributed to a 1986 step-up in output. In addition, the good 1986 growth rate was partly due to milder-than-normal weather, which reduced serious weather-related bottlenecks on the rail lines and eased demand for energy. More effective management—as a result of personnel changes, continued pressure for discipline, and modest administrative tinkering—also appears to have helped increase the growth of industrial materials. Enterprise managers uncovered

"hidden reserves" of labor, materials, and equipment. Finally, several key industrial facilities initiated a second work shift to intensify use of plant and equipment.

Output of ferrous metals increased by 2.8 percent. The ferrous metals industry met its production goals for crude steel, rolled steel, pipe, and iron ore, but did not perform as well in providing specific steel products needed in key sectors of the economy. A midyear Izvestiya article claimed that enterprises had not fulfilled plan targets for almost one-third of the steel products needed to increase the efficiency of metal use in the economy.

Growth in nonferrous metals output seems to have stemmed mainly from some improvement in labor productivity plus additions of new capacity and the modernization of several aluminum, copper, and nickel plants. In the gold industry, delays in commissioning new capacity and the declining gold content of mined ores held output growth to about 1 percent.

Production in the *chemical industry* grew at roughly the same rate as in 1985. A decline in pesticide production and a slowdown in growth of fertilizer

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Table 4
USSR: Growth in Energy Production

Percent

	Average Annual 1981-85	1981	1982	1983	1984	1985	1986 a
Primary Energy b	2.7	2.4	2.6	2.5	3.1	2.8	4.0
Oil	-0.3	0.6	0.6	0.6	-1.0	-2.9	3.4
Gas	8.1	6.9	7.6	7.0	9.6	9.5	6.7
Coal	0.3	-1.7	2.0	-0.3	-0.5	2.0	3.4
Electricity	3.6	2.5	3.1	3.7	5.2	3.5	3.6

a Preliminary

output prevented better results. Problems with raw material quality and availability as well as delays in startups of new facilities hampered fertilizer and pesticide production. On the positive side, startups of several new plants helped increase growth in output of most oil-based chemical products.

The sharp increase in growth in wood products represented a rebound from the very poor performance in 1985. Output of timber, although up 7 percent, did not match its previous high. A chronic need for retooling in the industry was underscored in 1986 by continuing long downtimes for logging equipment and breakdowns of obsolete timber transport machinery. Problems in delivering raw materials to downstream operations continue to plague the industry. In midyear a number of industry managers were fired or severely reprimanded.

Despite strong growth in construction materials output, the press complained about deficiencies in the supply of local construction materials. Renewed regime attention to housing needs—partly in response to the Chernobyl' disaster—and plans to finish up old construction projects placed a heavy burden on this industry. Achieving timely delivery of materials to

construction sites remained a serious problem. Measures were taken to try to improve outdated processing methods in the industry.

Energy. The energy sector produced almost 4 percent more primary energy than in 1985 (table 4). Targets for coal and natural gas were exceeded, oil production recovered most of the ground lost over the previous two years, and the electric power industry coped well with the disruptions caused by the Chernobyl' nuclear power accident and by reduced hydroelectric output. Part of the price of stronger industrial growth in 1986 was a large fuel bill.

Reversing a two-year decline, oil production in 1986 rose to 12.3 million barrels per day (b/d), 400,000 b/d above the 1985 level. All of the increase resulted from growth in West Siberian output that was realized largely by returning idle wells to production and sharply stepping up the pace of drilling and well completions. The cost of raising output was high. Although figures on investment have not been released so far, oil-industry investment was slated to rise by 31 percent in 1986, to roughly 15 billion rubles.

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b Data are for coal, crude oil, natural gas, natural gas liquids, and hydroelectric and nuclear electric power expressed in terms of oil equivalent, and include minor fuels such as peat, shale, and fuelwood.

Economic Impact of	the	Chernobyl	'Accident
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Our analysis of the Chernobyl' accident indicates that, while the ultimate cost in the loss of human lives will be high, the direct damage to agriculture, industrial facilities, and the environment last year was limited to a fairly small area.

The biggest economic cost so far has been the loss of electricity generated by the Chernobyl' reactors and the resulting increase in fossil fuel used by replacement power plants. We estimate that an additional 15 million barrels of fuel oil (40,000 b/d), 3 billion cubic meters of natural gas, and 5 million tons of coal were used in 1986. In addition, Eastern Europe may have been asked to bear the burden of some electricity cuts during the 1986-87 winter period of peak demand.

Longer term consequences for the Soviet civilian nuclear industry include the investment writeoffs of one or more Chernobyl' reactors and the costs of modifications to improve safety at other reactors. A rough total of these capital costs shows them to be equivalent to one to three years' investment in the industry. Nevertheless, we expect the Soviets will strive to minimize the impact of the Chernobyl' accident on their long-term plans for nuclear power and will continue to expand the role of this energy source.

In contrast, the accident's impact on agriculture was small. According to the Soviet press, the area contaminated by radioactive fallout is largely restricted to about 1,000 square kilometers, equivalent in area to a circle with a radius of 18 kilometers, and a few outlying pockets. Over half of the contaminated area consists of forest and swampland. Soviet data show that the region accounts for a minuscule share of total Ukrainian farm output. Damage to farming regions beyond the Chernobyl' area was probably minimal.

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In addition to the economic costs, human costs were substantial. The initial casualties—29 people reportedly died of acute radiation sickness—will probably account for only a minor part of the ultimate human toll of the Chernobyl' disaster. Many thousands of persons were exposed to radiation (or will be exposed to residual amounts of radiation as daily routines are established), increasing their long-term cancer risk. Theoretical calculations indicate that, over the next 70 years, radiation exposure from Chernobyl' could result in an additional 500 deaths from cancer among the 135,000 people evacuated. This would increase cancer risk from the natural population incidence of 12.5 percent to 12.7 percent. The potential death rate due to radiation-induced cancer among those involved in the cleanup is double that of the evacuees raising the overall cancer risk to roughly 13 percent. The cancer threat poses unique medical and psychological problems, even though the overall statistical increase in cancer rates is likely to be minimal.

Soviet oil exports to hard currency countries rose in volume by about 8 percent in 1986, but, because of the fall in world oil prices, hard currency earnings from oil declined by about \$4 billion.

Natural gas output grew by 6.7 percent, to 686 billion cubic meters, last year and was well above plan. Production of gas at the Urengoy gasfield supplied most of last year's increment to output. Yamburg, the USSR's second-largest field and expected source of most future increases in annual output, did not begin

producing until the final quarter. The volume of gas exports to hard currency countries is estimated to have dropped by about 10 percent, while the average price of these exports fell roughly 40 percent. Among the reasons for this decline in gas export earnings were slack demand in the West European market—due to warmer-than-normal weather and slow economic expansion—and intense price competition among gas-exporting nations.

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Coal production rose to 751 million tons, 25 million tons more than in 1985 and one of the largest gains since World War II. Higher labor productivity (possibly achieved by unofficially lengthening work hours in selected mining activities) as well as greater output from surface mines located east of the Urals probably accounted for most of the production gains. Because most of the coal from eastern basins is much lower in heat value than that produced elsewhere in the USSR, the net addition to energy output is likely to be less than implied by the reported growth in production.

Electricity output was only slightly below plan, despite a troubled year for the power industry, which suffered a loss of capacity in the Chernobyl' nuclear accident and a drought-related reduction of hydroelectric production. Electricity output grew 3.6 percent, to about 1.6 billion kilowatt hours. A strong performance from fossil-fuel power plants—a 5-percent rise in electricity generation—boosted total output enough to assure an adequate power supply to most of the USSR. (For a discussion of the economic impact of Chernobyl', see inset).

Machinery. The performance of the machinery sector—the source of investment goods, military hardware, and consumer durables—was creditable, although growth at 4.4 percent was little better than in 1985 and well short of the plan figure of 6.6 percent. Output of civilian machinery appears to have increased at roughly the same rate as production of military hardware. One of the reasons for the belowplan output may have been that the large surge in investment in this sector—the 1986 Plan called for a 30-percent increase in the civilian machine-building sector alone—resulted in downtime as enterprises installed new equipment or renovated their facilities. Whatever the reason, shortfalls were reported in the production of several key products, including electric motors, industrial robots, chemical equipment, forging and pressing machines, and petroleum equipment. Targets were exceeded, however, for most producer durables—including metal-cutting machines and computer equipment.

Progress in improving the quality, reliability, and technological level of Soviet-manufactured machinery and equipment was poor. According to published

leadership statements, "new" machinery being installed scarcely exceeded older models in terms of productivity, and even showcase factories were turning out poor-quality machinery. In addition, according to a recent press release, some enterprises were resisting the new state system of quality control, and the machine-building and other ministries "did not achieve a decisive breakthrough in . . . raising the technical level and quality of output."

Machinery producers also were repeatedly criticized in the press for failure to meet goals for product mix and deliveries. Timely delivery of specific, contracted products—not simply growth in overall output—is important to meeting plans for commissioning new capacity in the economy and renovating the production base. All civilian machine-building ministries were publicly criticized in the course of the year for not meeting monthly contractual deliveries. In most machine-building ministries, fulfillment of contractual commitments was lower than in 1985. According to the Central Statistical Administration's report on 1986 Plan fulfillment, "violations of contract discipline were committed by one in four enterprises." These probably are primarily violations of delivery schedules but also may include failures to meet quality or assortment specifications.

Consumer Nondurables. Production of nondurable consumer goods grew by only about 1 percent, after almost stagnating in 1985. Light industry output, however, grew more slowly than in 1985, evidently as a result of changes in the mix of goods produced. The output of children's goods, which are in high demand but relatively low in price, increased substantially in response to intense administrative pressure. This increase in the production of lower priced goods, however, probably occurred at the expense of higher priced items. Moreover, to judge from the Soviet press, light industry is still failing to provide consumers with products of satisfactory quality, particularly sewn goods and footwear.

Output of the *food-processing* industry rose only 0.7 percent last year, mainly because of a large decline in the production of alcoholic beverages. If alcohol is

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Table 5

USSR: Growth of Farm Output

	Average Annual 1981-85	1981	1982	1983	1984	1985	1986 a
	Percent che	ange					
Total output ^b	1.9	-0.7	7.2	6.0	-0.7	-1.7	7.3
Crops c	1.0	-3.6	13.4	2.9	-3.3	-3.5	9.5
Livestock d	2.9	-0.8	1.5	8.9	4.1	1.2	3.5
	Million me	etric tons, exc	cept where not	ed			
Major crops						-	
Grain	182.3	158.2	186.8	192.2	172.6	191.7	210.1
Potatoes	78.3	72.1	78.2	82.9	85.5	73.0	87.2
Sugar beets	76.3	60.8	71.4	81.8	85.4	82.1	79.3
Sunflower seeds	5.0	4.7	5.3	5.1	4.5	5.2	5.3
Cotton	9.1	9.6	9.3	9.2	8.6	8.8	8.2
Vegetables	29.2	27.1	30.0	29.5	31.5	28.1	29.7
Major livestock products							
Meat (slaughter weight)	16.2	15.2	15.4	16.4	17.0	17.1	17.7
Milk	94.4	88.9	91.0	96.5	97.9	98.6	101.1
Eggs (billions of units)	74.4	70.9	72.4	75.1	76.5	77.3	80.3

a Preliminary.

excluded from the data on food processing, growth was a healthy 6.5 percent. An improved feed supply for livestock helped boost production of processed animal products. Expansion of processing capacity also enabled the industry to make better use of available supplies. The output of processed meat, sausage, dairy products, and butter and vegetable oils was especially impressive. The Soviets also succeeded in carrying out some of the goals of the antialcohol campaign. Output of nonalcoholic drinks increased by 30 percent, in part by converting wine and spirits factories to nonalcoholic beverage production. Legal production of vodka, wine, and other high-alcohol drinks reportedly declined by 35 percent.

Agricultural Production Sets New Record

A strong recovery in agriculture in 1986 after a twoyear downturn reflected at least partial success for policies such as expanding the "intensive technology" program and improving feeding practices to increase productivity under the ongoing Food Program. Factor productivity improved by 1 to 2 percent, its first appreciable growth since 1982. Continued growth in the livestock sector, combined with substantially increased production of important crops such as grain, potatoes, and vegetables, resulted in a 7.3-percent increase in farm output (net of feed, seed, and waste)—to a level nearly 5 percent above the previous output record achieved in 1983. Good-to-excellent weather in parts of the Soviet grain belt helped increase grain and forage yields, while mild temperatures and adequate precipitation aided potato and vegetable production.

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b Net of feed, seed, and waste.

c Net of seed and waste.

d Excluding changes in inventory and net of feed and waste.

Table 6
USSR: Freight Shipments by Transport Mode

	Average Annual 1981-85	1981	1982	1983	1984	1985	1986 a
	Million to	าร					
Rail	3,840	3,762	3,725	3,851	3,910	3,951	4,061
Maritime	232	223	224	238	235	240	249
River	612	594	605	607	619	633	649
Highway b	6,536	6,651	6,739	6,612	6,357	6,320	6,648
Oil pipelines	641	634	641	649	648	631	653
Gas pipelines	408	345	373	400	440	482	NA NA
	Percentage	rate of grow	th				
Rail	1.2	0.9	-1.0	3.4	1.5	1.0	2.8
Maritime	1.0	-2.2	0.4	6.2	-1.3	2.1	3.8
River	2.2	4.6	1.9	0.3	2.0	2.3	2.5
Highway ^b	-0.4	3.0	1.3	-1.9	-3.9	-0.6	5.2
Oil pipelines	0.1	1.1	1.1	1.2	-0.2	-2.6	3.5
Gas pipelines	8.3	6.8	8.1	7.2	10.0	9.5	NA NA

Soviet data for 1986 are preliminary; growth rates as officially reported. Because of multiple counting (shipments moved on more than one carrier), no total is shown.

An excellent forage crop plus a 210-million-ton grain crop, the fourth-largest grain harvest on record, helped Moscow reduce grain imports and contributed to increased production of meat, milk, and eggs. Meat production grew by 3.5 percent to 17.7 million tons, exceeding planned output by 400,000 tons. Per capita availability of meat increased only a little, however, because increased production was partially offset by a reduction in meat imports. Potato production reached the highest level since 1979, increasing by about 14 million tons from the depressed 1985 level, and vegetable production was up by nearly 2 million tons (table 5).

Transportation Supports Expansion

Soviet transport carriers posted a strong performance in 1986 following a mediocre year in 1985. Freight traffic measured in ton-kilometers increased by 4.8 percent and passenger turnover by 3.8 percent, both well ahead of the planned rates. Freight shipments were up for every transport mode (table 6). These higher growth rates resulted from improved weather, which spurred the recovery of industrial deliveries from 1985's depressed performance; a good year for Soviet agriculture, which increased the growth of shipments on rail and highway carriers; and an increase in oil production, which reversed the 1985 fall in oil pipeline tonnage. The relatively mild winter of 1985/86 not only facilitated the increase in demand for transport services but also contributed to the transport sector's ability to handle those shipments expeditiously.

The railroads—which carry nearly three-fourths of nonpipeline freight traffic in ton-kilometers—squeezed 2.8 percent more tonnage onto the heavily

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b Excluding the non-common-carrier highway fleet.

Table 7 USSR: Total Trade, 1981-86 a Billion US \$

	Average Annual 1981-85	1981	1982	1983	1984	1985	1986 ь
Exports by region							
Total	87.3	79.4	87.2	91.7	91.5	86.7	94.6
Communist	49.3	43.4	47.1	51.0	51.9	53.2	63.0
Developed countries	25.2	24.4	26.2	26.7	26.4	23.3	19.2
Less developed countries	12.7	11.6	13.8	13.9	13.2	11.2	12.4
Imports by region							
Total	78.9	73.2	77.8	80.4	80.4	82.9	90.2
Communist	44.6	37.2	42.5	45.5	47.0	50.7	59.0
Developed countries	24.9	25.4	26.2	25.4	24.2	23.1	23.0
Less developed countries	9.4	10.6	9.1	9.6	9.1	9.1	8.2

[&]quot;Includes both hard currency trade and trade conducted with soft currency partners on a clearing account basis.

percent.

used system. They met the increased demands of industry and agriculture by increasing train weights and reducing turnaround times for freight cars, the same formula used since 1982 to boost performance. These measures were instrumental in controlling congestion on rail lines and alleviating freight car shortages—two factors that curbed freight traffic in the late 1970s and early 1980s and created a drag on overall industrial production. In addition, as part of a campaign to increase efficiency and control rising costs, rail managers trimmed their labor force during 1986. As a result, labor productivity soared by 7.5

Although 1986 was a good year for the railroads, the strong recovery observed since 1982 may have come to an end. According to analysis of quarterly rail performance, after a strong comeback in first quarter 1986, the railroads recorded little growth in freight traffic during the remainder of the year. Also, the increase in average train weight fell far short of the increases planned for 1986-90. Thus, the easier opportunities for putting more tonnage on the main lines may have been exhausted.

Meanwhile, shipments on the centrally directed highway carriers rebounded by 5.2 percent last year, reversing a three-year decline; however, total shipments were still below the 1982 peak. This turnaround in performance probably reflects, in part, a policy of shifting a greater share of trucking from departmental carriers, those managed by the industrial ministries, to the centralized fleet. The Soviets hope that greater centralization of highway shipping will improve the notorious inefficiency of overall truck transportation with respect to labor, capital, and fuel usage.

Soviet Trade Shifts Eastward

The foreign trade sector was battered for the second consecutive year, although the Soviets coped fairly well with a difficult situation. The collapse of world oil prices coupled with a sharp drop in the dollar relative to other major Western currencies resulted in an estimated 15- to 20-percent deterioration in the USSR's hard currency terms of trade. While the dollar value of total trade increased last year, largely

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bPreliminary.

because of a 19-percent depreciation of the dollar visa-vis the ruble, the dollar value of hard currency exports dropped about 8 percent (an estimate based on Soviet trade data for January-September 1986). Despite Soviet attempts to deal with the effects of the falling oil price by boosting sales, the value of oil exports plummeted by an estimated 35 percent. On the plus side, Moscow boosted the dollar value of arms exports to the Third World by roughly 15 percent, despite the difficult financial position of many of Moscow's principal arms customers.

Reduced hard currency earnings contributed to an estimated 10-percent decline in the dollar value of hard currency imports, with real purchases dropping more. The Soviets limited the extent of their import cuts, however, by selling markedly more gold at higher prices last year and by borrowing in world financial markets. Moreover, Moscow sought to expand its financial horizons by tapping alternative types of financing such as acceptance financing and more sophisticated credit instruments while continuing to use traditional syndicated loans and export financing. Grain accounted for the largest import cuts, as improved domestic agricultural performance and lower world grain prices allowed the Soviets to reduce foreign expenditures without jeopardizing grain consumption goals. Deliveries of machinery and equipment, important to Soviet efforts to modernize industry, increased in dollar terms last year but dropped in real terms.

In contrast to trade with the West, Soviet trade with the Communist world grew, increasing to about two-thirds of total trade compared with a little over 60 percent a year earlier. Moscow's terms of trade with its Communist trading partners improved slightly last year because the large drop in world oil prices had not yet been factored into the CEMA oil pricing formula. The USSR ran another sizable surplus with its East European partners, despite Moscow's repeated calls for more balanced trade. Moscow may have been willing to tolerate East European deficits again in 1986 in partial compensation for the economic damage caused by the Chernobyl' accident.

Resource Allocation Policy

In contrast to 1985, when the programs and decisions involving resource allocation resulted mainly from policies that predated Gorbachev's selection as General Secretary, the pattern of resource allocation in 1986 began to reflect Gorbachev's own policy to increase resources going to sectors critical to the modernization of the civilian economy. Increased resources for defense in 1986, however, reflect weapons programs that were under development long before Gorbachev became General Secretary.

While economic growth was picking up in 1986, Gorbachev was attempting to make modernization of industry a major source of growth by the end of the decade. In line with this strategy, investment soared, with the greatest attention being given to renovating and reequipping those facilities that produce machinery critical to the modernization effort. The share of output used for consumption slipped slightly, although the level of per capita consumption rose somewhat. Defense also was given more resources, although with the economy growing at a healthy pace the share of goods and services going to defense was roughly unchanged.

Mixed Returns on Modernization

In 1986, new fixed investment grew by 7.5 percent, very close to the planned rate (table 8). In line with the goals laid out in the 1986-90 Five-Year Plan, growth in investment channeled into the retooling and reconstruction of existing enterprises increased sharply, more than doubling the 7-percent average annual rate of the 1981-85 Plan period. Furthermore, although no yearend data were released, nine-month results indicate investment in industries producing machinery and equipment climbed by about 17 percent. An almost 10-percent increase in investment in the agro-industrial complex favored the industries that produce inputs for agriculture and process farm products.

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Table 8 USSR: Indicators of Capital Formation Growth a Percent

	Average Annual 1981-85	1981	1982	1983	1984	1985	1986 ե
Total new fixed investment	3.5	3.7	3.5	5.6	1.9	3.0	7.5
Of which:							,
Machinery	4.6	5.0	4.8	6.9	1.4	5.1	NA
Gross additions of new fixed capital c	3.0	0.3	5.2	5.9	2.2	1.5	6.0

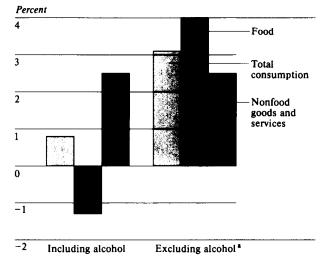
a Unless otherwise noted, rates of growth are based on official Soviet series valued in constant 1984 prices.

Despite the fastest annual growth of investment since the mid-1970s, the Soviets fell well short of their plan for bringing new capacity on stream. Newly commissioned production facilities increased by 6 percent, less than half the rate planned to support the modernization program. Shortfalls were especially large in metallurgy, machine building, and energy. Little progress was realized in concentrating resources on highpriority projects, curtailing construction time, and reducing the volume of unfinished construction. Construction delays are probably a cause for concern to the leadership, which is counting on planned additions to production capacity to contribute to faster economic growth in the late 1980s.

Some Gains for the Consumer in Key Areas

Per capita consumption grew by less than 1 percent in 1986, mainly because legal sales of alcohol, which account for about one-fifth of food expenditures, fell by 37 percent as a result of the antialcohol campaign (table 9 and graph). Western reporting indicates considerable grumbling about the reduced availability of liquor, although some of the drop in state-produced alcohol probably was offset by increases in home brew. (See inset for a discussion of the impact of alcohol-related changes on Soviet economic statistics.)

USSR: Growth in Per Capita Consumption, 1986



a Consumption of alcohol was 20 percent of total food consumption.

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The term "gross additions of new fixed capital" differs from "new fixed investment" in that it counts only those investment projects that were completed.

Table 9	Percen
Table	1 ercent
USSR: Growth in Per Capita Consumption a	

	Average Annual 1981-85	1981	1982	1983	1984	1985	1986 b
Total	0.5	1.3	-1.0	1.1	1.8	-0.5	0.8
Food	-0.8	-0.1	-1.5	1.2	0.8	-4.5	-1.3
Soft goods	1.3	2.1	-1.5	0.6	2.4	3.2	1.4
Durables	3.0	6.3	-2.6	1.7	4.6	5.2	5.0
Services	1.5	1.4	1.4	1.3	1.8	1.8	2.1

^{*} Established 1982 prices.

Despite the cutback in alcohol sales, enhanced availability of key components of consumption—food and housing—may have earned Gorbachev some points with the populace. Supplies of quality food, one of the main indicators by which consumers judge their well-being, improved in 1986. Fruit and vegetable production was up from depressed 1985 levels, and per capita meat consumption grew by about 1 percent. In addition, new housing completions were up 4.4 percent, the largest gross increment to the housing stock in two decades.

Continued growth in wages, coupled with cutbacks in alcohol sales, resulted in a large increase in the amount of cash held by households. The higher prices in the uncontrolled collective farm markets during 1986, despite larger supplies, and continued queuing in state stores with fixed prices demonstrate that unsatisfied demand for quality foods is still substantial.

On balance, Gorbachev's campaign to improve consumer goods and services, announced in October 1985, was off to a slow start. Although food supplies were more abundant, enterprises failed to meet goals for supplying consumer services to workers and the population. Overall, growth in per capita consumption of nonfood goods and services in 1986 was below the average annual rate of growth posted during 1976-80,

although similar to that during 1981-85. Finally, complaints about the poor quality of consumer goods persisted.

Real Defense Outlays Increase

While our information on defense spending growth in 1986 is less solid than that for consumption and investment, our preliminary estimate is that overall defense expenditures in constant prices increased by about 3 percent last year. Although somewhat above the rate of the recent past, it does not appear that this growth represents any change in defense spending policy since Gorbachev's arrival. Rather, it was largely driven by the start or early phases of production of several new weapon systems that were under development long before Gorbachev took office. In 1985 and 1986 these programs helped raise procurement growth to about 3 percent per year.

The largest jump in expenditures in 1985 was in aircraft procurement. The initial production stages of the new Blackjack bomber—whose development dates back to the early 1970s—and Moscow's continued emphasis on fighter production helped drive up aircraft expenditures. Increases in both tactical and strategic missile procurement—led by outlays for the SA-10 and SA-12 air defense systems—also raised missile procurement in 1986 following a cyclical decline in the early 1980s.

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Glasnost Has Its Limits

Gorbachev's policy of glasnost has apparently reversed a 15-year trend toward reducing the amount of economic data officially released to the public. The Soviet economic problems that Gorbachev wishes to address have been more frankly discussed in public speeches, the national press, and economic journals. Moreover, several discontinued data series reappeared in the 1985 Soviet statistical yearbook, and the report on plan fulfillment for the first three quarters of 1986 had nearly as much detail on performance as the usual annual report in January. The 1986 annual plan report also was expanded slightly-especially in areas measuring progress in capital construction and in the technical level of industrial production—and some new statistical series have been released in the economic journals.

The limits to openness are gradually becoming apparent, however. Gorbachev is eager to use glasnost to document the magnitude of the problems he sees in the Soviet economy and bring public criticism to bear against managers and party officials responsible for failures to meet plan targets. He is not interested in using it to publicize bad news for the consumer, nor to release information on defense-related production. Information on changes in personal savings was omitted from the annual report on plan fulfillment in 1986, suggesting leadership sensitivity to the problem of excess purchasing power that was aggravated by cutbacks in alcohol sales. Moreover, in contrast to

earlier years, planned increases in production of individual nonferrous metals were not published for 1986, making assessment of growth in that strategically important branch of industry more difficult.

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Furthermore, puzzling discrepancies have appeared in official Soviet statistics on aggregate economic performance in 1985 and 1986. In particular, reported growth of national income, personal consumption, and retail trade—in constant prices—is surprisingly high compared with their growth in current prices. Such comparisons of reported growth in current and constant prices imply average price reductions that are not consistent with published information about changes in individual prices in 1985 and 1986.

Although these statistics do not affect CIA measures of Soviet economic performance, which are based primarily on disaggregated data expressed, to the extent possible, in physical units, they are widely used as indicators of changes in growth. The primary reason for the implied deflation seems to be an inappropriate treatment of prices of alcoholic beverages—which rose sharply—in the official index of retail prices. Such a procedure enables the Soviets to show economic growth and improvement in living standards substantially higher than would otherwise be the case.

Meanwhile, we believe Gorbachev has told military leaders that—like their civilian counterparts—they will have to use resources more efficiently. One manifestation of this has been a greater emphasis on conservation and less costly training practices. For example, at a major naval conference in December 1985 attended by the newly appointed Commander in Chief of the Soviet Navy, Admiral Chernavin, it was reported that some commanders had failed to understand the need for "an intensification of combat training" during 1985 and instead had "decided on an unnecessary increase in the number of sea exercises,

which leads to overuse of engine capacity, overconsumption of fuel, and premature aging of equipment."

The 1987 Plan: More of the Same

Building on the fast start achieved in 1986, the 1987 Plan is ambitious, implying GNP growth of roughly 4 percent with growth of industry at about 4.5 percent. Since the improved performance in 1986 reflects, in

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Economic Restructuring—Impact Yet To Come

Measures taken in 1986 to improve organization and management were basically meant to modify the existing economic system to improve its efficiency and flexibility over the long term. Implementation of these decrees and policies is just beginning, and real changes in operating practices, if they come, lie ahead. Gorbachev's initiatives have focused primarily on four areas: streamlining the bureaucracy, increasing enterprise autonomy, improving workers' incentives, and encouraging personal initiative. None of the measures adopted so far, however, could be characterized as the "radical reform" that Gorbachev called for at the 27th Party Congress. They do not re-form (restructure) the economic system in any essential way. Some of the innovations may produce small benefits, along with much that will bring complaints, but the system-rooted problems will continue.

Reorganizing the Bureaucracy

A cornerstone of Gorbachev's reform program has been his efforts to reorganize and streamline the bureaucracy. According to his own statements, these policies are designed to achieve more effective centralized control over the main direction of the economy while leaving more of the day-to-day management to lower levels. His insistence that the bureaucracy shift its focus to strategic planning has been reflected in a number of organizational changes. New superagencies answering directly to the Council of Ministers have been created to oversee key economic sectors. Such coordinating bodies have been set up for machine building, agro-industry, energy, construction, foreign trade, and social development. Most of these bodies are not yet fully operational, however, and progress in achieving intended sharp cutbacks in personnel has been spotty.

Increasing Enterprise Autonomy

A new law, scheduled to be adopted at the next session of the Supreme Soviet, codifies the enterprises' rights and calls for the election of enterprise managers. It also endorses other Gorbachev initiatives that have given selected enterprises the right to:

- Deal more directly with their suppliers, rather than funneling their requirements through authorities in Moscow.
- Trade directly with foreign firms.
- Base their production plans on trade orders from customers.
- Exercise greater financial autonomy and retain a larger percentage of their profits.

Improving Workers' Incentives

Gorbachev's chief accomplishment in this area has been the passage of a wage reform designed to reverse the leveling trend of the Brezhnev years and to create a closer relationship between workers' pay and their performance. Although this reform amounts to a pay increase for many categories of workers, no state funds have been set aside for the increase. The effectiveness of the reform will depend on whether the enterprises can find ways to finance these increases from their own resources.

Encouraging Personal Initiative

Gorbachev's promise to provide greater scope for individual initiative has brought new legislation sanctioning expanded business opportunities outside the state sector for individuals and small businesses, especially in consumer goods and services. Permissible action is greatly circumscribed, however. Individual activity must be conducted under close state supervision with participants obtaining licenses and paying taxes on their income. The law restricts participation to pensioners, housewives, students, and moonlighters, and forbids the hiring of labor. There is also no provision for access to necessary supplies for such activity. What impact these actions will have is still unclear.

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part, a mild winter and a rebound from the poor showing of the previous year, sustaining growth in 1987 will be more difficult.

Nonetheless, Gorbachev's drive to revitalize economic growth by modernizing the industrial base, improving management, and motivating worker effort apparently is to continue in 1987. The industrial plan focuses on producing more and better machinery for modernization and more goods for the consumer. The Soviets seem to be counting on the sharp rise in civilian machine-building investment in 1986 to spur an acceleration in output in 1987. Machinery output, after increasing by about 4.4 percent in 1986, is slated to jump by 7.3 percent in 1987. This task will be made more difficult by a new quality control program requiring state acceptance of output, introduced in 1,500 enterprises in January 1987. Under this program, output that does not pass state quality inspectors cannot be counted in production figures. In addition, machine builders are to concentrate their efforts on high-technology products for investment and quality durables for the consumer.

Also in line with the modernization program, investment again seems to have priority. Growth in total investment in 1987, however, is not scheduled to match the initial leap planned for 1986. Nonetheless, total investment is to increase by 4.6 percent—faster than overall economic growth and apparently a bit faster than what was originally called for in the 1986-90 Plan. Disappointing growth in the machinery sector and the need to invest more in energy sectors probably have resulted in greater allocations of funds for them. In a speech outlining the Plan, State Planning Committee Chairman Talyzin suggested that more investment than was originally planned would also go to sectors serving the consumer. Housing is scheduled for a sharp rise.

Plan documents also indicate that higher labor productivity is to be achieved, in part, by complementing the discipline campaign with a 3-percent increase in average wages (about the same as in 1986), with the gains directed to good performers and to technical personnel. As a further incentive to greater work effort, Gorbachev may be counting on new legislation that allows some expansion of private production of consumer goods and services.

The 1986 gains in labor productivity will be hard to repeat, however. A continuation of the discipline and antialcohol campaigns will not have the same incremental impact on worktime, and gains from reductions in other worktime losses, including intrashift idle time, will be hard to achieve. Their major causes are systemic problems—supply disruptions and downtime of aged equipment—that cannot be solved quickly by administrative measures. Gorbachev probably is hoping that some of the numerous modifications of the economic system and organizational changes introduced since he took office will begin to bear fruit. Most of the changes in these areas are just beginning to take effect, however, and any benefits to be reaped will come over the longer term. (See inset for a discussion of organizational changes and "restructuring" of the economic mechanism undertaken in 1986.)

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